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(71) Applicant: APPLIED BIOMETRICS, INC. [US/US]; 2879 Westedge Boulevard, Mound, MN 55364 (US).

(72) Inventors: ABRAMS, Jerome, H. ; 248 Bedford Street S.E., Minneapolis, MN 55414 (US). HOVLAND, Claire, T. ; 2879 Westedge Boulevard, Mound, MN 55364 (US).

(74) Agents: JOHNSON, Eugene, L. et al.; Dorsey & Whitney, 2200 First Bank Place East, Minneapolis, MN 55402 (US).

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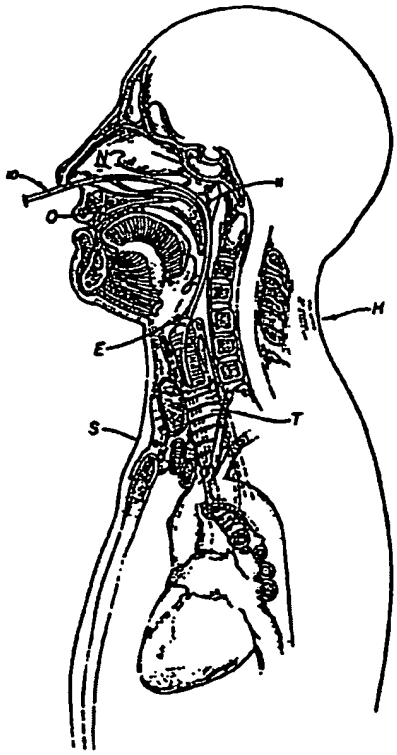
(54) Title: METHOD AND APPARATUS FOR MEASURING ARTERIAL BLOOD FLOW

(57) Abstract

Blood flow in the aorta and pulmonary artery of a mammal, most typically a human, is measured volumetrically by a non-invasive, ultrasound method and apparatus. The method comprises placing a piezoelectric ultrasound transducer in the trachea in great proximity to the aorta or pulmonary artery by passage through the oral or nasal cavity past the epiglottis and into the trachea or by passage through the surgical opening into the trachea in the case of patients who have had a tracheotomy. Ultrasound waves are transmitted toward the path of flow of blood in the artery. Reflected waves are received. The average Doppler frequency difference between transmitted and received waves is measured. The cross-sectional size of the artery is measured. Blood flow rate is determined from the measurements. The apparatus comprises a tracheal tube (11) or probe with one or two transducers (21, 22) mounted at one end of the tube. The transducer(s) is (are) disposed to transmit ultrasound in selected directions. Electrical conductors (24, 25, 26, 27) extend from the transducers the length of the probe.



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